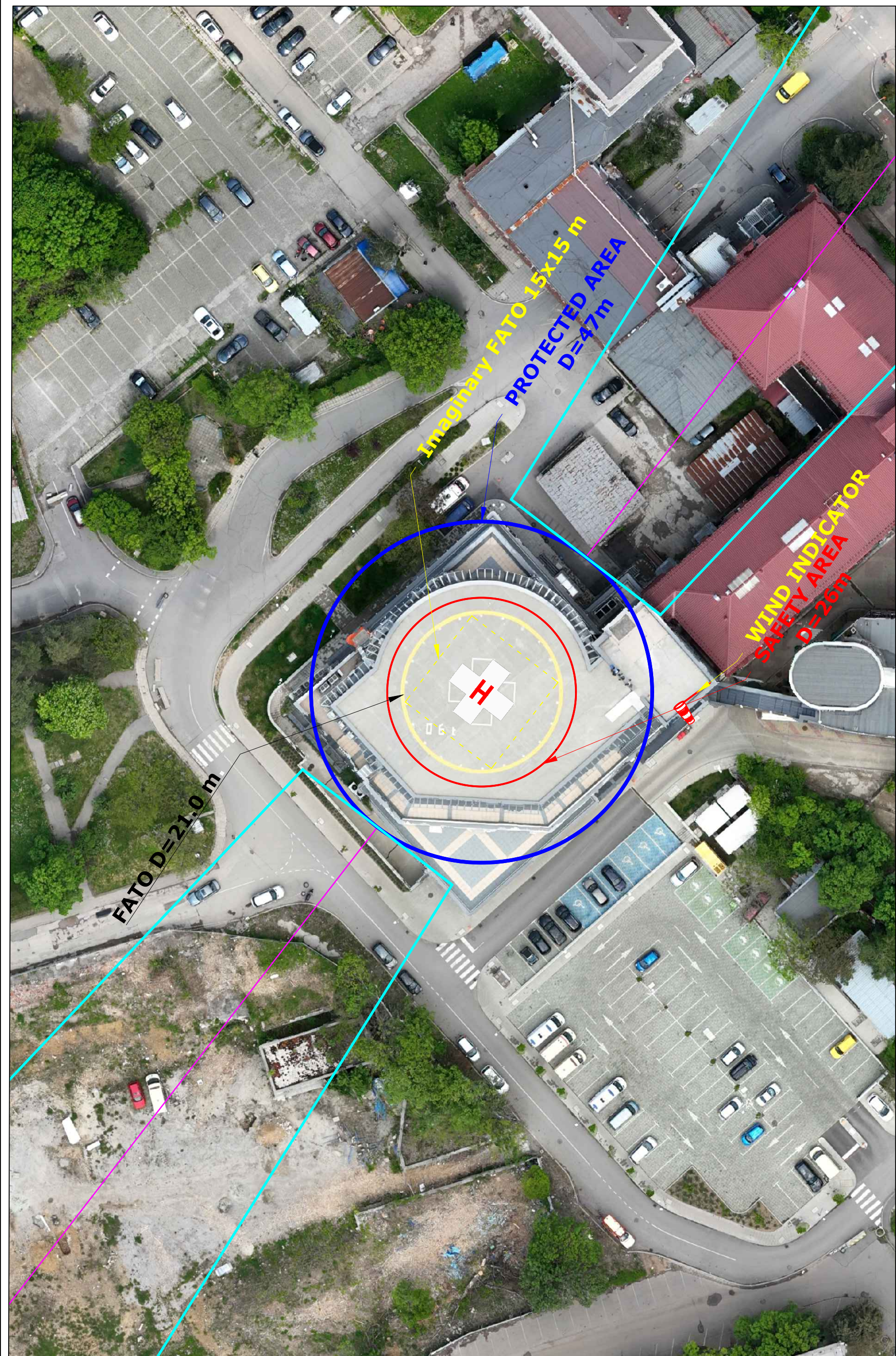




Scale / Машаб 1:2000 50m 100m 150m 200m 250m

Scale / Машаб 1:500 10m 20m 30m 40m 50m

FATO 038°/218° GEO
D=21m 032°/212° MAG

БГС2005 Кадастрални координати
N:4730038.527 E:320644.220

WGS84 Географски координати
N:42° 41' 05.678" E:23° 18' 40.244"

H=587 m (EGM2008)
H=1926 ft (EGM2008)
Declination - 5°41' (01-2024)

REVISION 0

PHASE Registration

SCALE 1:2000

1:500

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DATE 01.2024

ORTHOPH. 13.05.2023

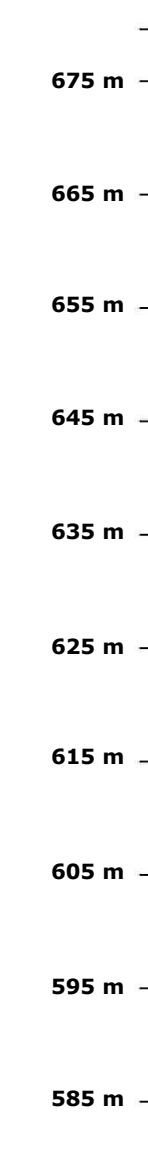
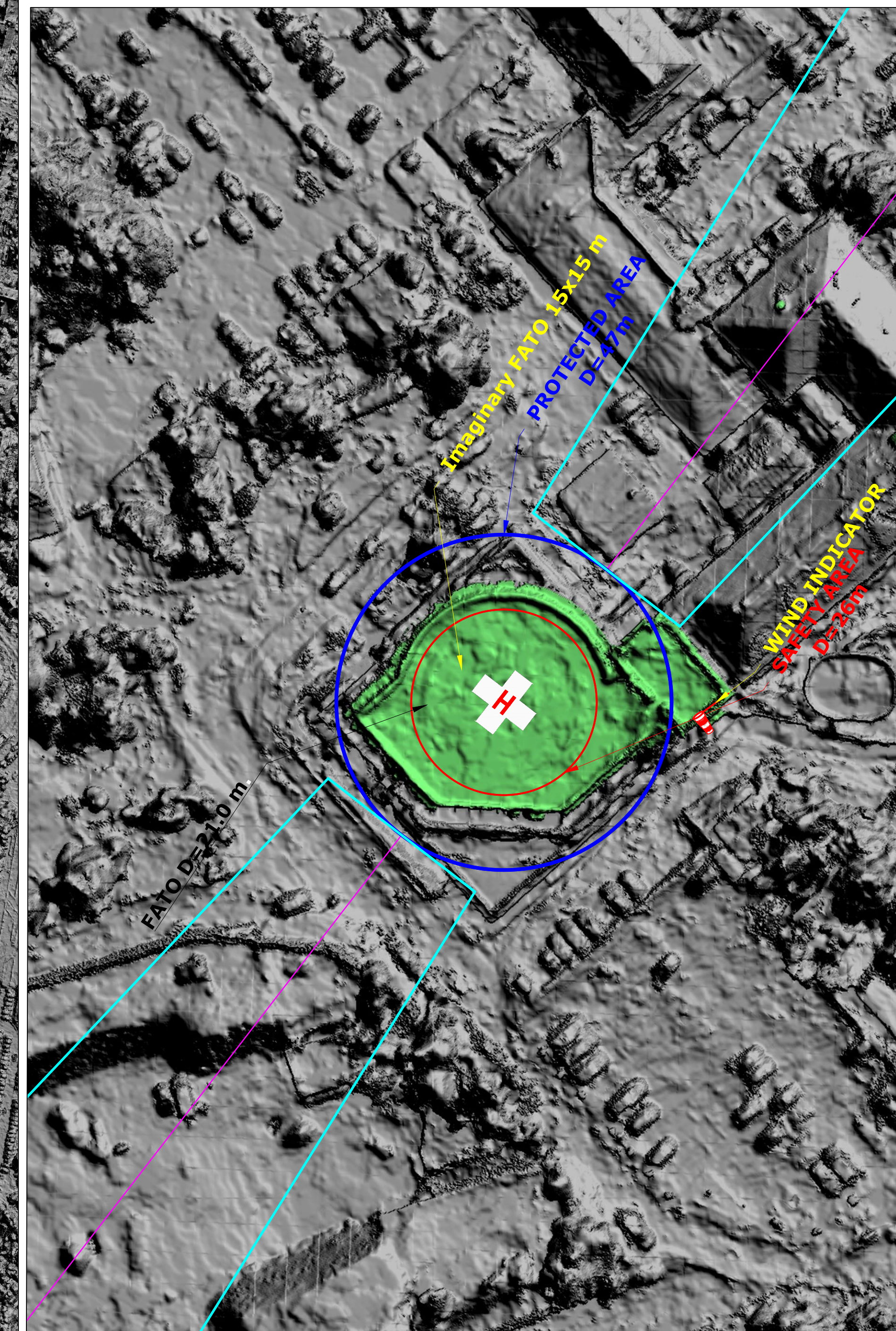
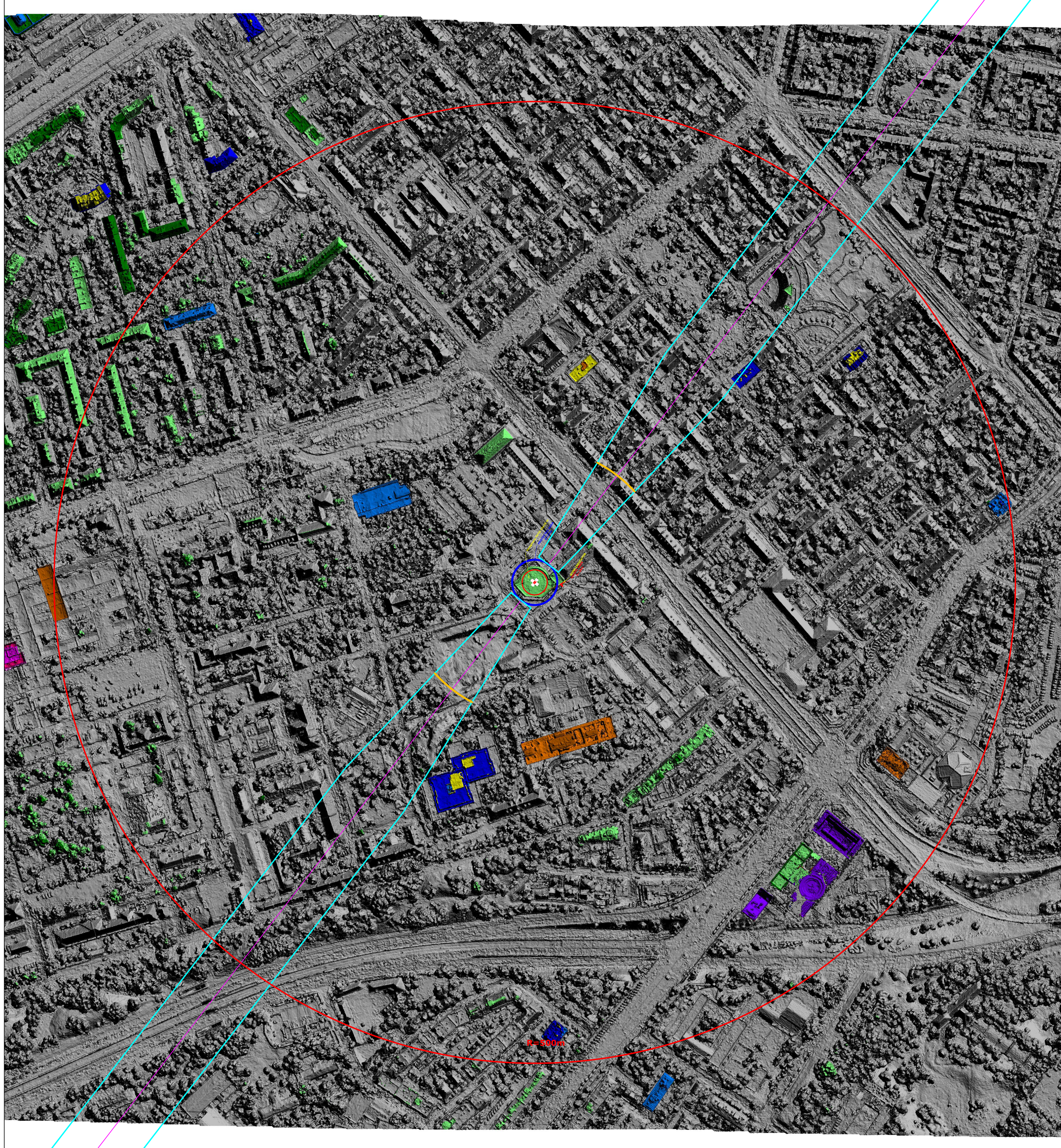
ЦРАПЛАН ЕООД
STRAPLAN GmbH

№ 101-04-001

University Multidisciplinary Hospital for Active Treatment

SVETA EKATERINA, Sofia

OPERATING MANUAL, Part C, Appendix 1
Heliport and operating site manual



Helicopters conducting operations to/from a FATO at a hospital that is located in a congested hostile environment will be operated in accordance with performance class 1. For these operations the approved "Confined Area" Category A procedures (according A109S Trekker RFM, Supplement 4, Category A Operations) will be used. The "Confined Area" procedures are applicable to Ground Based and Elevated Helipads/Heli decks. Also they require a lighter gross weight and does not require available surface in front of the Take-Off/landing path for Reject Take-Off or OEI landing. Thanks to the variable TDP/LDP, allows the presence of obstacle of significant height along Take-Off/landing path. For performance and limitations see A109S Trekker RFM and OM, Part B.

DEFINITIONS

Confined Area (CAT 'A' Procedures) - Applicable both to Ground Based and Elevated Helipads/Heli decks. Also requires a lighter GW and does not require available surface in front of the Take-Off/landing path for Reject Take-Off or OEI landing. Thanks to the variable TDP/LDP, allows the presence of obstacle of significant height along Take-Off/landing path.

CAT A Take-Off - Operation of the helicopter taking into account a single engine failure at any time after the start of the Take-Off transition, to ensure the helicopter has the capability: at or prior to the Take-Off Decision Point (TDP), to return and safely land back on the Take-Off area; at or after the Take-Off Decision Point (TDP), climb away from the point of engine failure and continue forward flight with one engine inoperative (OEI).

Continued Take-Off distance - The Continued Take-Off (CTO) distance is the horizontal distance from the start of the Take-Off procedure to a point at least 35 ft ATS where VTOSS and a positive rate of climb (ROC) are attained following an engine failure at or after TDP. For an elevated helipad/heli deck the Continued Take-Off distance is the horizontal distance along the Take-Off path from the start of the Take-Off to the point at which the rotorcraft attains and maintains a speed of at least VTOSS and establishes a positive rate of climb.

Landing distance - The horizontal distance required to land in an OEI condition and come to a complete stop from a point 50 ft ALS.

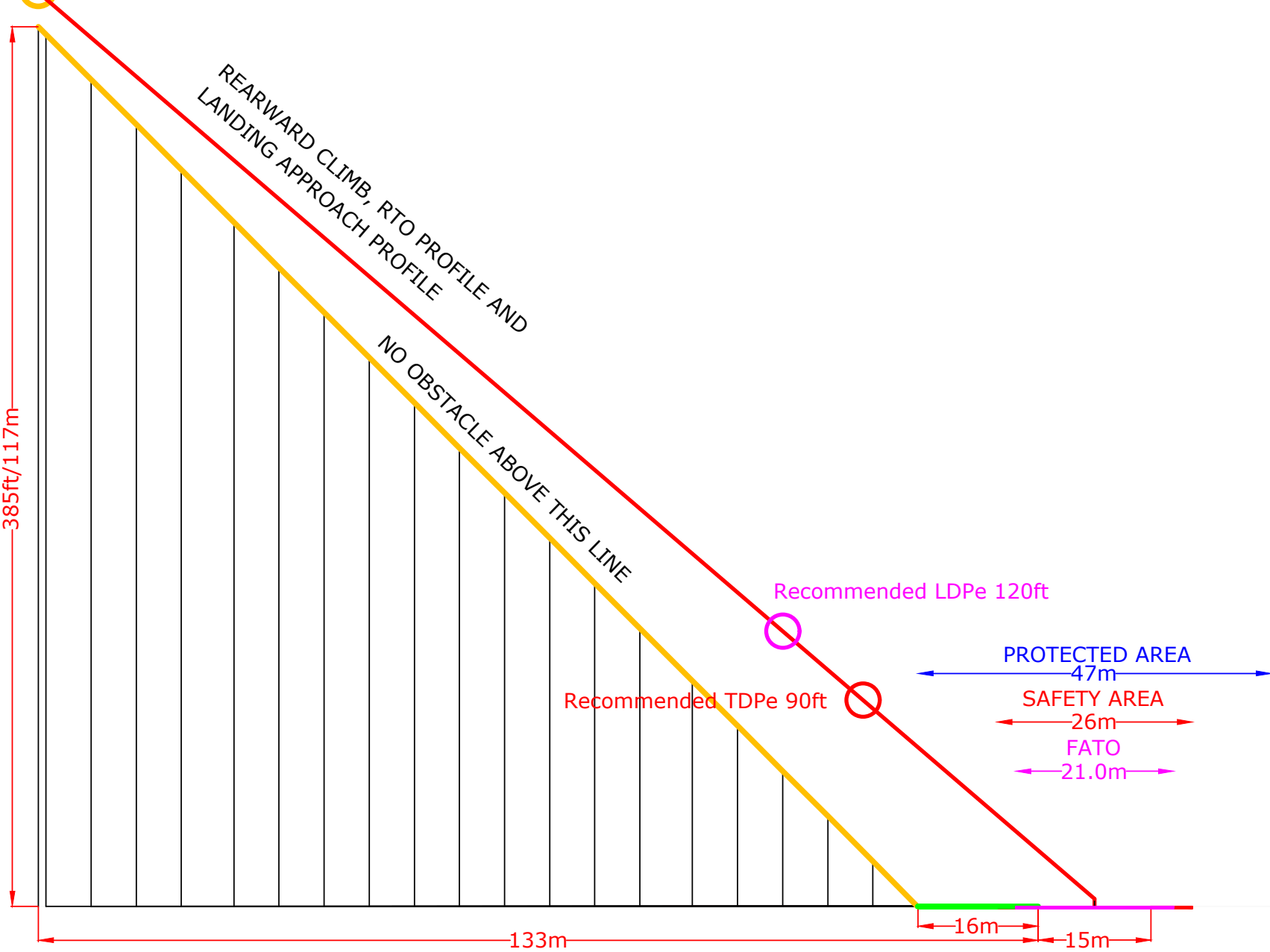
Balked landing distance - The horizontal distance from the LDP to the point at least 35 ft ALS where VBLSS and a positive rate of climb (ROC) are attained following an engine failure before LDP.

Take-Off Safety Speed (VTOSS) or Balked Landing Safety Speed (VBLSS) or Climb Out Safety Speed (VCOSS) - The airspeed at which the scheduled climb gradient OEI can be achieved.

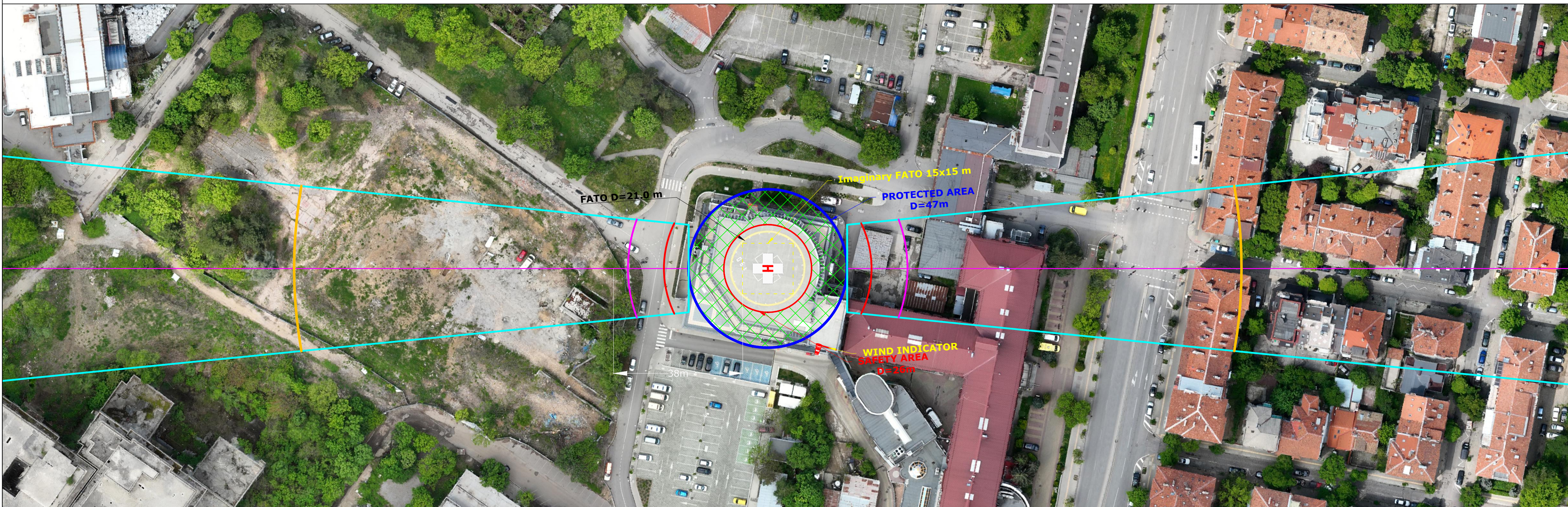
Take-Off Decision Point (TDP) - The first point in the Take-Off path from which a CTO capability is assured and the last point from which a RTO is assured, within the rejected Take-Off distance.

Landing Decision Point (LDP) - The last point in the approach landing path from which it is possible either to land on a predetermined area or accomplish a Balked Landing.

Max. TDP/LDP 400ft ATS/ALS



LEONARDO A109S TREKKER - CONFINED AREA LANDING/TAKE-OFF - DIRECTION 032° MAG

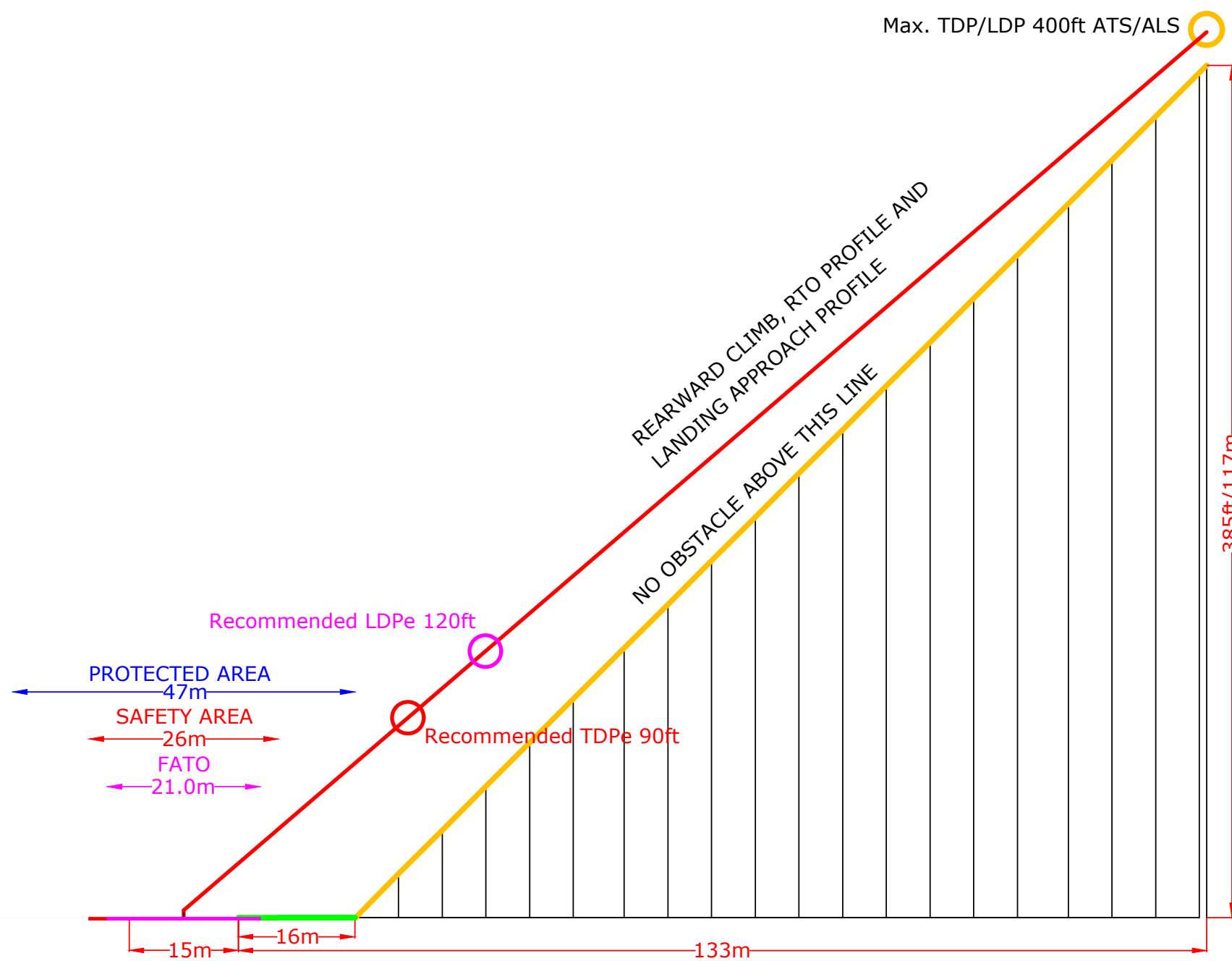


ABBREVIATIONS

ALS - Above Landing Surface
ATS - Above Take-Off Surface
BL - Balked Landing
CTO - Continued Take-Off
LDP - Landing Decision Point
LDP_E - Extended Landing Decision Point
LDP_{MAX} - Maximum Landing Decision Point
LDP_{MIN} - Minimum Landing Decision Point
TDP - Take-Off Decision Point
TDP_E - Extended Take-Off Decision Point
TDP_{MAX} - Maximum Take-Off Decision Point
TDP_{MIN} - Minimum Take-Off Decision Point
V/BLSS - Balked Landing Safety Speed
V/COSS - Climb Out Safety Speed
V/TOSS - Take-Off Safety Speed
RFM - Rotorcraft Flight Manual
D/CTO - Continued Take-Off Distance (m)
D/O - Distance from Take-Off position to Obstacle (m)
H/O - Height of Obstacle in Back-Up Profile (ft)
H/O - Height of Obstacle (ft)
H/C - Required clearance height above Obstacle (ft)

CONFINED AREA HEIGHT AND LANDING DISTANCE from LDP			
LDP height ATS (ft)	LDP height ATS (m)	LDP - Landing Distance (ft)	LDP - Landing Distance (m)
100	30	100	40
120	37	120	37
140	43	140	43
160	49	160	49
180	55	180	55
200	61	200	61
220	67	220	67
240	73	240	73
260	79	260	79
280	85	280	85
300	91	300	91
320	98	320	98
340	104	340	104
360	110	360	110
380	116	380	116
400	122	400	122

Figure 84D-20 Confined Area - Height and Landing Distance from LDP



LEONARDO A109S TREKKER - CONFINED AREA LANDING/TAKE-OFF - DIRECTION 212° MAG

CONFINED AREA HEIGHT AND DISTANCE (Distance in Metric Unit)				
TDP height ATS (ft)	Backup distance (m)	Min height ATS (ft)	Height ATS at the end of C.T.O. (ft)	
75	21	15	25	
85	27	35	80	
95	32	45	70	
105	34	55	80	
115	37	65	90	
125	40	75	100	
135	43	85	110	
145	46	95	120	
155	49	105	130	
165	52	115	140	
175	56	125	150	
185	59	135	160	
195	62	145	170	
205	65	155	180	
215	68	165	190	
225	71	175	200	
235	74	185	210	
245	77	195	220	
255	80	205	230	
265	83	215	240	
275	86	225	250	
285	89	235	260	
295	92	245	270	
305	95	255	280	
315	98	265	290	
325	101	275	300	
335	104	285	310	
345	107	295	320	
355	110	305	330	
365	113	315	340	
375	116	325	350	
385	119	335	360	
395	122	345	370	

Figure 84D-10 Confined Area - Height and Distance (Metric Unit)

CONFINED AREA OBSTACLE DISTANCE IN BACKUP PROFILE (up to 8000 ft Hd)			
Obstacle height ATS (ft)	Obstacle height ATS (m)	Minimum obstacle Distance from Helipad (ft)	Minimum obstacle Distance from Helipad (m)
0	0	-55	-16
25	8	-72	-22
40	12	-62	-19
60	18	-152	-46
80	24	-132	-40
100	30	-182	-56
120	37	-172	-53
140	43	-192	-59
160	49	-212	-65
180	56	-232	-71
200	61	-252	-77
220	67	-272	-83
240	73	-292	-89
260	79	-312	-95
280	85	-332	-101
300	91	-352	-107
320	98	-372	-114
340	104	-392	-120
360	110	-412	-126
380	116	-432	-132
395	117	-437	-133

Figure 84D-14 Confined Area - Minimum Distance for Obstacle Under Rearward Climb or Approach Path Area (up to 8000 ft Hd)

Calculating the **Confined Area - Continuous Take-Off Distance from TDP to VTOSS** taking into account the "worst-case scenario" pressure (resp. pressure altitude), temperature and GW (3175 kg) as an additional safety measure for risk mitigation. **Maximum Continuous Take-Off Distance = 320m**

Calculating the **Confined Area - Balked Landing Distance from LDP to VBLSS** taking into account the "worst-case scenario" pressure (resp. pressure altitude), temperature and GW (3175 kg) as an additional safety measure for risk mitigation. **Maximum Balked Landing Distance = 320m**

Evaluation of the obstacles according **GMI CAT.POL.H.205(b)(4) (Regulation (EU) No 965/2012)**.

The determination of the LDP height considers any obstacles in the Balked Landing profile (**LDP (ft) = H_O + H_C (35 ft) + 85**) or the Landing Approach profile (the LDP must be chosen, considering the Obstacle Zone). Where obstacles are present in both profiles the higher of the LDP values is to be taken.

The TDP required to clear an obstacle positioned inside the CTO distance by the required H_C (35 ft) is: **TDP_E (ft) = H_O + H_C (35 ft) + 55**. If there are obstacles under the Rearward Climb profile then the obstacle height and position, with respect to the Helipad, must be within the Obstacle Zone as defined by the tables in the A109S RFM.

Recommended LDP_E (however the pilot-in-command/commander may define a different LDP_E when required)

Recommended LDP_E for landing in the direction 032° MAG
The LDP is calculated considering obstacle with the following parameters:
Obstacle height ALS (ft): NIL
Distance from Helipad (m): NIL

Recommended TDP_E (however the pilot-in-command/commander may define a different TDP_E when required)

Recommended TDP_E for Take-Off in the direction 032° MAG
The TDP is calculated considering obstacle with the following parameters:
Obstacle height ATS (ft): NIL
Distance from Helipad (m): NIL

***Remark:**
FOR CURRENT PROFILES AND PROCEDURES, PLEASE REFER TO LATEST A109S TREKKER RFM VERSION

Scale: 1:750

FATO D=21 m
038°/218° GEO
032°/212° MAG
N:4730038.527 E:320644.220
WGS84
N:42° 41' 05.678" E:23° 18' 40.244"
N:42° 41.095 E:23° 18.671
H=587 m (EGM2008)
H=1926 ft (EGM2008)
Declination = 5°41' (01-2024)

BULGARIA HELI MED SERVICE JSC.

University Multidisciplinary Hospital for Active Treatment

SVETA EKATERINA, Sofia

OPERATING MANUAL, Part C, Appendix 1
Helipad and operating site manual

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STRAPLAN GmbH

№ 101-04-003

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